Listing of Claims

1.   (Amended) A packet-switched data communication system having a control station and a plurality of remote terminals that communicate on demand with said control station over a wireless link, said control station comprising a data port for receiving data packets destined for said terminals; means for generating a plurality of carriers forming data channels for carrying said data packets; means for assigning said data packets destined for a particular terminal to one or more of said data channels; means for generating a carrier forming a control channel carrying control information pertaining to said data channels; and means for simultaneously transmitting said carriers carrying said data packets and said control channel to said remote terminals as a radio frequency signal; and each of said terminals comprising a receiver for receiving said radio frequency signal; an analog-to-digital converter for digitizing said received signal; a buffer for storing said digitized received signal; and a processing means for continually monitoring the contents of said buffer to extract control information from said control channel, and said processing means processing said stored signal to extract said packet data destined for said terminal from one or more of said data channels in response to control information received on said control channel identifying said packet data as destined for said terminal.

2.   (Amended) A-The packet-switched data communication system as claimed in of claim 1, wherein said transmitting means transmits said carriers as a framed baseband signal, each frame containing one or more data channels and the control channel.

3.   (Amended) A The packet-switched data communication system as claimed in of claim 2, wherein said buffer stores a frame of raw baseband data.

4.   (Amended) A The packet-switched data communication system as claimed in of claim 3, wherein said processing means comprises a digital signal processor.

5.   (Amended) A The packet-switched data communication system as claimed in of claim 1, wherein each said terminal further comprises a demodulator for demodulating said received radio frequency signal to a baseband signal prior to analog-to-digital conversion.

6.   (Amended) A The packet-switched data communication system as claimed in of claim 5, wherein said demodulator is a quadrature demodulator.

7.   (Amended) A The packet-switched data communication system as claimed in of claim 4, wherein said digital signal processor first decimates and then demodulates the control channel.

8.   (Amended) A The packet-switched data communication system as defined in of claim 1, wherein said means for assigning data packets includes means to dynamically assign said data packets to one or more channel types.

9.   (Amended) A The packet-switched data communication system as defined in of claim 8 wherein said channel types include any one or more of the following: random access channels; assigned TDM channels; assigned TDMA channels; and dedicated channels.

10.   (Amended) A method of establishing communication between a control station and one or more of a plurality of mobile terminals over a wireless link in a packet-switched data communications system, the method comprising generating a plurality of carriers forming channels; dynamically assigning one or more data carriers to a destination terminal; modulating said one or more carriers with packet data for said destination terminal; generating a control carrier containing control information pertaining to said modulated carriers; transmitting said data carriers and said control carrier as an aggregate signal to said destination terminal; storingwherein said received aggregate signal is stored in a buffer at said destination terminal; continually extracting said control information is continually extracted from said aggregate signal stored in said bufferat said destination terminal; and extracting packet data is extracted from said bufferedstored signal in response to extracted control information received on said control channelidentifying that said packet data as destined for said destination terminal.

11.   (Amended) A The method as claimed in of claim 10, wherein said aggregate signal is transmitted as a framed signal, each frame containing one or more of said data carriers and said control carrier.

12.   (Amended) A The method as claimed in of claim 11, wherein said aggregate signal is stored in said buffer at said destination terminal one frame at a time, and said control information is extracted from said stored frame to determine whether it contains data intended for the destination terminal.

13.   (Amended) A-The method as claimed in of claim 10, wherein said aggregate signal comprises a baseband signal that is modulated onto a radio frequency carrier.

14.   (Amended) A-The method as claimed in of claim 13, wherein said radio frequency carrier is first demodulated at said terminals to extract said baseband signal, and said baseband signal is then passed through an analog-to-digital converter prior to being buffered in stored at said destination terminal.

15.   (Amended) A-The method as claimed in of claim 13, wherein said control carrier is at a frequency located substantially in the center of the received bandaggregate radio frequency signal comprised of multiple data carriers and said control carrier.

16.   (Amended) A-The method as claimed in of claim 15, wherein said control carrier is first decimated prior to demodulation.

17.   (Amended) A mobile terminal forming part of a packet-switched data communication system having a control station and a plurality of remote terminals that communicate on demand with said control station over a wireless link, said terminal comprising: a receiver for receiving an incoming signal having a control channel containing control information and one or more data channels having data packets; and an analog-to-digital converter for digitizing said received signal; a buffer that stores said digitized received signal, and a processor that continually monitors said stored signal to extract control information from said control channel and extract packet data destined for said terminal from one or more of said data channels in response to the extracted control information received on said control channel identifying said packet data as destined for said terminal.

18.   (Amended) A The mobile terminal as claimed in of claim 17, further

comprising a demodulator for demodulating said incoming signal to baseband before said

incoming signal is passed to said analog-to-digital converter.

19.   (Amended) A The mobile terminal as claimed in of claim 17, wherein said

processor is a digital signal processor.

20.   (Amended) A The mobile terminal as claimed in of claim 19, wherein digital

signal processor first decimates said control channel prior to demodulation.

21.   (Amended) A The mobile terminal as claimed in of claim 17 including means

to dynamically assign data packets to various channel types for communicating with said

control station.

22.   (Amended) A packet-switched data communication system comprising:

a control station comprising:

a processor that generates a plurality data channels for carrying data packets,

assigns the data packets to one or more of the data channels, and

generates a control channel carrying control information pertaining to

said data channels; and,

a transmitter for simultaneously transmitting the data channels and the control

channel as an aggregate signal; and,

a plurality of remote terminals that communicate with said control station, each of

said remote terminals comprising:

a receiver receiving the aggregate signal;

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an analog-to-digital converter digitizing the received aggregate signal;

a storage device buffer storing the digitized received aggregate signal; and,

a processor continually monitoring the contents of said storage devicebuffer,

extracting control information from said control channel, and

extracting data packets destined for said terminal from one or more of

the data channels in response to the extracted control information

identifying the packet data as destined for said terminal.

23.   (New) The packet-switched data communication system of claim 1, wherein

said processing means continually monitors the contents of said buffer to extract control

information from said control channel at the same time that said processing means processes

said stored signal to extract said packet data destined for said terminal.

24.   (New) The method of claim 10, wherein the continually extracting is

performed at the same time as extracting data from said aggregate signal.

25.   (New) The mobile terminal of claim 17, wherein said processor continually

monitors said stored signal to extract control information from said control channel at the

same time that said processor extracts packet data destined for said terminal from one or

more of said data channels.